

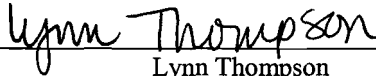
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ulrich Bonne et al. Confirmation No.: 8299
Serial No.: 10/671,930 Examiner: Keri A. Moss
Filing Date: September 26, 2003 Group Art: 1797
For: PHASED MICRO ANALYZER III, IIIA
Docket No.: H0004978-1100.1208101

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Assistant Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

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Lynn Thompson December 17, 2007
Date

Applicants submit that the Examiner's rejections contain at least the following clear errors and/or omissions of one or more essential elements needed for a prima facie rejection.

Claims 1, 2, 5, 6, 22-24, and 28-30 remain rejected as being unpatentable over Bonne (US 6,393,894). Applicants note that this exact rejection was present in the final Office Action mailed 11/02/2006, and after Applicants filed a pre-Appeal Brief Request for Review on 02/02/2007, the Notice of Panel Decision from Pre-Appeal Brief Review filed 02/27,2007 stated that the rejection is withdrawn and a new Office action will be mailed. Applicants submit that as this rejection has not changed, it remains in error for the reasons set forth in the previous Request for Review filed 02/02/2007. Further, in response to Applicants' most recent arguments, the Examiner makes various assertions that are unsupported by any reference or articulated reasoning with rational underpinning. The Examiner asserts that while Bonne does not expressly teach a fluid sensor comprising a plurality of concentrator heater elements corresponding to a plurality of separator heater elements, the number of heater elements used by one of ordinary skill in the art is a result-effective variable. The Examiner further cites *In re Boesch* as teaching that optimization of a result-effective variable is ordinarily within the skill of one in the art. The Examiner asserts that it would have been obvious to vary the number of either separator or concentrator heater elements to obtain the desired concentration of the desired compound.

The Examiner acknowledges that Bonne teach a single heating element in the separator, but asserts that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. Mere duplication of the parts of Bonne does not result in the claimed sensor. Independent claim 1 recites, “a ratio control mechanism for changing the ratio of concentrator heating elements relative to separator heating elements”. Bonne does not appear to teach a ratio control mechanism and because Bonne teaches a single heating element in the separator, there is no motivation or suggestion for not only adding additional heating elements to the separator, but for putting such additional heating elements in a pre-arranged pattern with the concentrator heating elements, and adding a ratio control mechanism, as claimed. Further, the plurality of heating elements in the claimed separator is not a mere duplicate. The presence of the plurality of separator heating elements in combination with the plurality of concentrator heating elements and the ratio control mechanism provides versatility to the fluid sensor by allowing the ratio of concentrator heating elements relative to separator heating elements to be changed. Changing the ratio allows different concentrator and different separator heating elements to be utilized, which allows different groups of gases to be separated and detected. For example, see the specification at page 19, line 18 through page 20, line 12. Further, Applicants submit that there is no motivation for one of ordinary skill in the art to modify the sensor of Boone by adding separator heating elements and a ratio control mechanism. The only motivation for making such a change appears to be found in Applicants' specification, which is improper. Additionally, even if one were to duplicate the single separator heating element of Boone, one would not arrive at the claimed fluid sensor because Boone also fails to teach concentrator and separator heating elements in a pre-arranged pattern, or a number of separator heater elements corresponding to the number of concentrator heater elements, or a ratio control mechanism as indicated above.

Bonne appears to teach a sensor assembly control block 180 that controls the timing of the plurality of heating elements in the concentrator and the single heater in the separator. See column 7, line 36 through column 8, line 37. While the controller 180 of Bonne appears to control the timing of the heating elements in the concentrator, there is no motivation for one of ordinary skill in the art to modify the controller to control a ratio of a plurality of concentrator

and separator heating elements in a pre-arranged pattern. The Examiner appears to be asserting that merely adding heating elements to Bonne achieves the claimed sensor. Applicants respectfully disagree. Claim 1 recites not only a plurality of heating elements situated in the separator, where Bonne teaches a single heater, but claim 1 also recites the heating elements in the separator and concentrator being in a pre-arranged pattern, and a ratio control mechanism for changing the ratio of concentrator heating elements relative to separator heating elements, none of which are taught or suggested by Bonne. The Examiner asserts that such modifications would have been obvious to obtain the desired concentration of the desired compound. The Supreme Court in *KSR Int'l Co. v. Teleflex Inc.* quotes *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006):

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”.

Emphasis added; see page 14 of the April 30, 2007 decision. The Court further stated:

a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.

See page 14 of the April 30, 2007 decision. Applicants submit that the Examiner's conclusion of obviousness lacks the necessary articulated reasoning with rational underpinning. Further, the Examiner's assertion that merely varying the number of separator or concentrator heater elements is well-known and achieves the claimed sensor is in error. Merely adding additional heater elements to the sensor of Bonne does not appear to result in the claimed sensor. In addition to added heater elements in the separator, claim 1 is distinguished from Bonne in that the claimed sensor has the concentrator and separator heating elements in a pre-arranged pattern, and the sensor includes a ratio control mechanism for changing the ratio of concentrator heating elements relative to separator heating elements. Bonne do not appear to teach a ratio control mechanism and the Examiner has provided no reasoning for why one of ordinary skill in the art would have been motivated to add such a mechanism to the sensor of Bonne. Thus, the Examiner's assertion that adding a sensor heating element to Bonne achieves the claimed sensor is in error and is not supported by articulated reasoning with rational underpinning.

Independent claim 22 recites, in part, “a concentrator having a first plurality of heater elements; a separator having a second plurality of heater elements corresponding to the number of concentrator heater elements”; emphasis added. Bonne does not appear to teach such a structure. Bonne appears to teach a plurality of heating elements in the concentrator, but a single heating element in the separator, in a system to “increase or multiply the concentration levels beyond those that can be achieved by a single interactive element having a sorbent material”; see column 1, lines 44-47. Thus, Bonne appear to teach their system as already providing the ability to identify and detect gas constituents or determine the concentration of the constituents with increased sensitivity as compared to other systems. See column 1, lines 54-57. The Examiner has not provided any support for the assertion that varying the number of either separator or concentrator heater elements as the well-known and expected result of varying the final concentration of the desired compound. Further, in light of Bonne’s teaching that their system, having a single separator heating element and a plurality of concentrator heating elements, provides increased sensitivity, there is no support for the Examiner’s assertion that it would have been obvious to have the number of separator heating elements correspond with the number of concentrator heating elements. The Examiner’s assertion appears to be directly contradicted by the specific teachings of Bonne.

The Examiner also asserts that Boone teaches a micro discharge mechanism located proximate to the first detector, pointing to the outlet below part 264 in Figure 9, and column 4, lines 14-19. Applicants respectfully traverse the rejection. Boone appears to teach a single detector 264 in figure 9. The Examiner asserts that the unlabeled "outlet" is a micro discharge mechanism because it is microscopic in size and actively discharges the fluid from the chip. The Examiner merely points to a teaching of a microbridge system for support. MPEP 2143.03 recites:

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Application Serial No. 10/671,930
Reply to Office Action dated October 17, 2007

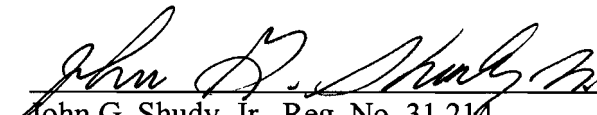
Boone does not appear to teach or suggest the micro discharge mechanism proximate the first detector, as is recited in claim 2. The rejection is thus in error.

Claims 3, 4, 8-10, and 25-27 are rejected as being unpatentable over Bonne in view of Kubisiak. The Examiner acknowledges that Bonne fails to teach a second detector or a flow sensor, or a processor on a separate board from the concentrator, separator and phased heater array. Kubisiak is cited for teaching a detector and flow sensor connected to a processor comprising switches and control logic, where the detector is used to measure fluid properties. The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Bonne with the processor and switches of Kubisiak in order to control the timing of the activation of the different heating elements and to gain the additional advantage of determining the phase lag and fluid properties.

For at least the reasons set forth above, Bonne does not appear to teach the basic elements of independent claims 1 and 22, from which claims 3-10 and 25-29 depend. Kubisiak does not appear to provide what Bonne lacks, thus any combination of Bonne and Kubisiak also fails to teach each and every element of the claims. Further, even if one were to combine the teachings of Bonne and Kubisiak, one would not arrive at the claimed invention. None of the references appear to teach or suggest a fluid sensor having a first plurality of heating elements in a concentrator and a second plurality of heating elements in a separator, or a ratio control mechanism as claimed. Reconsideration and withdrawal of the rejection are respectfully requested.

Respectfully submitted,

Dated: 12-17-07


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